

# EFFECT OF MONETARY POLICY, FINANCIAL INCLUSION, AND ECONOMIC GROWTH IN NIGERIA

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## Abstract

*This study examines the impact of monetary policy and financial inclusion on economic growth in Nigeria from 2004Q1 to 2024Q4 using quarterly data from the CBN, the World Bank development indicators and the national statistics bureau. The study uses a quantitative ex post facto time series approach, incorporating monetary policy variables; the monetary policy rate (MPR), the money supply (M2) and the exchange rate (EXR) together with financial inclusion indicator, number of commercial bank branches and inflation, while controlling inflation. Unit root tests confirm the mixture of variables  $I(0)$  and  $I(1)$ , which justifies the use of an Autoregressive Distributed Lag (ARDL) model for both short- and long-term dynamics. The results show that, in the short term, exchange rate changes and bank branch expansion have significantly boosted economic growth, while inflation has had a moderate negative impact and traditional monetary policy instruments have had only a negligible impact. Financial inclusion, both through physical and fintech-enabled banking channels, will underpin sustainable growth in the long term, although inflation and exchange rate volatility have a mixed impact. Granger's causality tests reveal no direct causal link between branch expansion and growth, underlining that financial inclusion is not enough in itself without complementary monetary policies, digital financial services, and financial literacy. The study recommends that digital banking be integrated into physical branches, monetary policies designed to promote inclusive access to finance and national financial literacy programmes be implemented to maximize growth.*

**Keywords:** Economic Growth, Financial Inclusion, Development, Monetary Policy, Nigeria

## 1.0 Introduction

Globally, the primary aim of macroeconomic policy is to foster economic growth, as governments strive to attain price stability, generate employment, and ensure continuous enhancements in living standards. Monetary policy has historically been pivotal in this endeavor by affecting aggregate demand through the management of interest rates and the regulation of money supply. However, both empirical and theoretical research indicates that the success of monetary policy is heavily reliant on the structure and depth of the financial system that transmits policy signals (Mishkin, 1996; Gertler & Kiyotaki, 2010). In this context, financial inclusion has garnered increasing global focus as a means to broaden access to financial services, improve monetary transmission, and foster inclusive economic growth (Demirgüç-Kunt, Beck, & Honohan, 2008; Beck, Levine, & Loayza, 2000).

In developing regions, especially Africa, the relationship between monetary policy and financial inclusion has become more evident due to the presence of shallow financial markets and widespread exclusion from formal financial services. A considerable number of households and small enterprises function outside the formal financial system, which restricts their access to credit and diminishes their ability to respond to changes in interest rates and liquidity. Traditional financial development theories, particularly the McKinnon–Shaw hypothesis, contend that financial repression and restricted access to financial services hinder savings, investment, and growth in developing economies (McKinnon, 1973). Recent empirical research further illustrates that enhanced financial inclusion boosts the effectiveness of macroeconomic policies and promotes growth by optimizing resource allocation and lowering transaction costs (Allen *et al.*, 2016; Sahay *et al.*, 2015). Despite ongoing reforms and the expansion of digital finance in Africa, financial exclusion continues to pose a significant barrier to effective monetary policy transmission and sustained economic growth.

Financial inclusion in Nigeria has significantly improved since the low levels observed in 2010; however, ongoing gaps still hinder inclusive economic development. The Enhancing Financial Innovation and Access (EFInA) 2023 Access to Finance Survey indicates that formal financial inclusion increased to 64% of Nigerian adults in 2023, up from 56% in 2020. Total inclusion, encompassing both formal and informal sectors, reached 74%, which means approximately 26% of adults remain financially excluded. This represents a notable decrease from previous decades, yet a considerable portion of the population still lacks formal access to financial services (EFInA, 2023). Supporting these national findings, Obiora and Ozili (2024) reveal that Nigeria continues to fall short of global and regional best practices in essential inclusion metrics such as account ownership, borrowing, and the utilization of financial products. The data also highlights significant disparities based on gender, geography, and socioeconomic status. Furthermore, academic research underscores that digital financial services and innovative FinTech solutions have broadened access, particularly through mobile and non-bank channels. Nevertheless, substantial barriers persist, including low financial literacy levels and limited engagement with financial products, such as formal loans and savings beyond basic accounts (Lui *et al.*, 2025). Collectively, these findings suggest that while Nigeria's financial inclusion performance has improved over the

past decade, structural and demographic inequalities in access to and use of comprehensive financial services remain a policy challenge for achieving inclusive economic growth.

Nigeria offers a significant opportunity to explore this relationship due to its substantial economic size, developing monetary policy framework, and ongoing development challenges. While the Central Bank of Nigeria has actively utilized monetary policy tools such as interest rate modifications and control of money supply to stabilize the economy and encourage growth, the growth performance in Nigeria has continued to be unstable, marked by inflationary pressures, unemployment, and structural limitations. Simultaneously, financial inclusion is still inconsistent, especially among rural households and small to medium-sized enterprises, despite recent advancements in digital financial services (Demirgüç-Kunt *et al.*, 2018). In this context, the study investigates the combined impact of monetary policy and financial inclusion on economic growth in Nigeria, where economic growth is represented by gross domestic product or GDP per capita, monetary policy is assessed through interest rate and money supply metrics, and financial inclusion is evaluated using indicators of access, usage, and digital financial services, while also accounting for inflation, education, infrastructure, and trade openness. The primary aim of the study is to determine whether financial inclusion enhances the effectiveness of monetary policy in fostering economic growth in Nigeria. This paper is organized into five sections: introduction, literature review, methodology, results and presentation, and conclusion and recommendations.

## **2.0 Literature Review/Theoretical Framework**

### **2.1 Conceptual Clarification**

#### **2.1.1 Monetary Policy Rate**

The Monetary Policy Rate (MPR) serves as the primary policy interest rate established by the Central Bank of Nigeria (CBN) to impact liquidity, credit conditions, and inflation, thus influencing economic activity. It functions as a fundamental tool within the monetary transmission mechanism, where alterations in the MPR indicate the cost of borrowing and investment incentives throughout the economy. Empirical studies indicate that the MPR, in conjunction with other monetary policy variables, has a significant correlation with economic growth in Nigeria, illustrating how the actions of the central bank interact with outcomes in the real sector (Olofinlade *et al.*, 2020). While the strength of this relationship may fluctuate based on economic conditions and structural rigidities, the policy rate continues to be a crucial factor in macroeconomic modeling.

#### **2.1.2 Financial Inclusion**

Financial inclusion pertains to the degree to which households and enterprises can access and utilize affordable financial services, including bank accounts, savings products, credit, and mobile money. The theoretical foundation for incorporating financial inclusion into growth models is derived from financial intermediation theory and endogenous growth theory. These theories suggest that increased access to financial services improves savings mobilization, investment, and economic participation, thus fostering growth. Empirical data from Nigeria indicates that indicators of financial inclusion, such as credit to the private sector, deposits, and the penetration of bank branches, have a positive impact on economic performance by

facilitating capital flow to productive sectors (Obademi *et al.*, 2025). This body of research highlights the significance of inclusive financial systems in enhancing the effectiveness of macroeconomic policies.

### **2.1.3 Economic Growth**

Economic growth in the field of macroeconomic research indicates a consistent rise in the production of goods and services within an economy over a specified time frame, typically assessed through real gross domestic product (GDP) or GDP per capita. This metric is crucial for assessing the success of macroeconomic strategies, such as monetary policy and financial inclusion, as it demonstrates shifts in overall economic performance (Olofinlade *et al.*, 2020). In Nigeria's context, numerous empirical studies utilize GDP growth as the dependent variable and investigate how various policy tools and structural elements affect growth results over time, emphasizing its vital importance in analyzing policy impacts.

## **2.2 Theoretical Literature**

This research is based on various theories, including the Financial Deepening Theory, Financial Intermediation Theory, Inclusive Growth Theory, and Human Capital Theory, which are outlined below:

### **2.2.1 Financial Deepening Theory**

The theoretical framework of financial deepening, articulated by McKinnon (1973) and Shaw (1973), posits that enhanced availability of financial services augments the volume and efficiency of capital allocation, thereby stimulating economic advancement. Subsequent empirical investigations, notably by King and Levine (1993), corroborated this perspective, demonstrating a positive association between more developed financial infrastructures and sustained long-term growth. Within the broader discourse on financial integration, this theory underscores how access to financing, capital accumulation vehicles, and risk mitigation instruments empowers economic agents to manage uncertainties, amass financial resources, and undertake productive ventures (Beck and Demirgüç-Kunt, 2006). The proliferation of microfinance, for instance, exemplifies the capacity of novel financial offerings to incorporate underserved populations into formal financial structures (Morduch, 1999). Nevertheless, dissenting scholarly opinions caution that financial deepening does not inherently guarantee equitable growth, as benefits may disproportionately concentrate among those entities already possessing the capacity to leverage financial avenues (Rajan and Zingales, 2003). Consequently, this necessitates the integration of financial deepening initiatives with robust regulatory safeguards and inclusive policy frameworks to ensure that financial integration genuinely contributes to comprehensive economic progress.

### **2.2.2 Financial Intermediation Theory**

The theory of financial intermediation, with its intellectual origins in Schumpeter's work (1911) and subsequently formalized by scholars such as Goldsmith (1969) and Gurley and Shaw (1960), accentuates the pivotal role of financial intermediaries in aggregating capital and directing it towards productive economic undertakings. As articulated by Levine (2005), these intermediaries, including banking institutions, serve to mitigate informational

asymmetries, streamline transactional processes, and optimize resource allocation, all of which are indispensable for fostering economic expansion. Within the purview of financial inclusion, intermediaries extend provisions such as credit facilities, savings instruments, and payment platforms to financially underserved populations, thereby enabling their participation in commercial endeavors that were previously inaccessible (Beck, 2002). Nevertheless, reliance on intermediation is not without its caveats: Excessive financial layering may engender inefficiencies or introduce systemic vulnerabilities, particularly in the absence of stringent regulatory frameworks (Allen *et al.*, 2005; Demirgüç-Kunt and Levine, 2008). Furthermore, such intermediaries may prioritize commercially viable clientele over marginalized segments, consequently impeding the equitable distribution of economic opportunities. Thus, while the financial intermediation paradigm substantiates the nexus between financial inclusion and economic development, it simultaneously underscores the imperative of reconciling operational efficacy with distributive justice through robust governance structures.

### **2.2.3 Inclusive Growth Theory**

The paradigm of inclusive growth, notably championed by the scholarship of Sen (1999) concerning development as freedom and subsequently substantiated by the Stiglitz *et al.* Commission (2009), posits that economic expansion must be widespread and just in its distribution to attain enduring viability. In divergence from conventional economic paradigms that accord primacy to aggregate macroeconomic augmentation, this conceptualization underscores the imperative of mitigating socioeconomic disparities and guaranteeing the universal diffusion of economic dividends. Within this theoretical framework, financial inclusion assumes a pivotal role, integrating underserved demographics into the regulated financial architecture, thereby furnishing them with avenues to acquire financial instruments such as credit facilities, risk protection mechanisms, and capital accumulation opportunities that facilitate socioeconomic advancement (World Bank, 2018). By empowering individuals to allocate resources towards human capital development and entrepreneurial endeavors, financial inclusion ensures the transmogrification of economic advancement into palpable enhancements in societal welfare. Nevertheless, detractors contend that inclusive developmental approaches are susceptible to impediments in their operationalization, particularly within milieus characterized by deficient institutional oversight or ingrained socioeconomic stratification, where mere availability of financial mechanisms might prove insufficient to surmount systemic barriers (IMF, 2015). Notwithstanding these practical difficulties, the inclusive development paradigm furnishes a robust ethical underpinning for conceptualizing financial inclusion as an impetus for both social justice and long-term economic resilience.

### **2.2.4 Human Capital Theory**

The human capital theory, initially conceptualized by Schultz (1961) and subsequently elaborated upon by Becker (1964) and Lucas (1988), posits that strategic investments in education, vocational proficiencies, and individual health endowments enhance productive capacity and, consequently, aggregate economic output. Pertaining to financial inclusion, this theoretical framework implies that enhanced financial accessibility furnishes economic agents with the requisite capital for engagement in scholastic pursuits, skill development

initiatives, and medical provisions, thereby augmenting their human capital (Demirgüç-Kunt and Levine, 2001). Moreover, financial inclusion facilitates new venture creation by ameliorating the availability of initial and expansionary funding, a mechanism which both stimulates innovation and generates avenues for gainful employment (Allen *et al.*, 2014). This nexus between financial resources and human resource development assumes heightened significance within emerging economies, which are frequently characterized by persistent funding shortfalls for educational endeavors and nascent enterprises. Nevertheless, detractors, exemplified by Psacharopoulos (1994), contend that the efficacy of human capital investments can exhibit considerable variability, contingent upon the robustness of institutional quality and prevailing employment dynamics. Consequently, while inclusive financial systems demonstrably augment human potential cultivation, their ultimate efficacy is modulated by overarching structural and regulatory frameworks that facilitate the transmutation of fiscal accessibility into substantive economic advantages.

### 2.3 Theoretical Framework

The optimal theoretical paradigm for scrutinizing the interrelationship between monetary policy initiatives, financial integration, and national economic expansion in Nigeria is the theory of financial intermediation, augmented by perspectives on financial deepening and inclusive development. This theoretical underpinning, originating from foundational contributions by Schumpeter (1911), Gurley and Shaw (1960), Goldsmith (1969), and further elucidated by Levine (2005), delineates the mechanisms by which macroeconomic monetary decisions propagate through financial entities notably banking institutions utilizing channels such as interest rate adjustments, credit provisioning, liquidity management, and savings aggregation, thereby shaping capital formation and overall economic performance. Within the Nigerian milieu, characterized by a financial architecture predominantly centered on banking operations, this paradigm comprehensively elucidates how monetary policy tools influence the capability of financial intermediaries to disseminate financial provisions to previously underserved segments of the populace and corporate sector, consequently fostering greater financial integration. As financial integration facilitates enhanced access to credit facilities, savings instruments, and transactional platforms, it resonates with the financial deepening hypothesis advanced by McKinnon (1973) and Shaw (1973), which posits that an extensive and efficacious financial infrastructure stimulates capital formation and sustained economic advancement. Concurrently, it bolsters the inclusive development tenet advanced by Sen (1999) and the World Bank (2018), asserting that widespread accessibility to financial provisions guarantees economic expansion that is both egalitarian and enduring. Therefore, grounding the present inquiry in the theory of financial intermediation, whilst integrating supplementary components of financial deepening and inclusive development, furnishes a cohesive and contextually pertinent conceptual apparatus for comprehending the pathways through which monetary policy can advance financial integration and culminate in enduring economic prosperity within Nigeria.

### 2.4 Empirical literature

Ufoeze, *et al.*, (2018) applied ordinary least square and co-integration tests to assess the impact of monetary policy on economic growth in Nigeria over the period of 1986 to 2016. The natural log of the GDP was used as the dependent variables against the explanatory

monetary policy variables: monetary policy rate, money supply, exchange rate, lending rate and investment. The study revealed that a long run connection exists among the variables. Not that alone, the study showed that monetary policy rate, interest rate, and investment have insignificant positive effect on economic growth in Nigeria. Money supply however has significant positive effect on growth in Nigeria. Exchange rate has significant negative effect on GDP in Nigeria. Money supply and investment granger cause economic growth, while economic growth causes interest rate in Nigeria. The study affirmed that monetary policy can be adequately used to control Nigerian economy and thus as an important mechanism towards price stability.

Afolabi, *et al.*, (2018) investigated the link between monetary policy instruments and Deposit Money Banks Loans and Advances in Nigeria from 1981-2016. The study employed Toda and Yamamoto granger non-causality model and discovered that structural changes in monetary policy system exerted positive significant impact on loan and advances of Deposit Money Banks in Nigeria. Findings also revealed bidirectional relationship existing between MPR and loan and advances of Deposit Money Banks in Nigeria. Notably, MPR granger causes loans and advances in Nigeria. The other explanatory variables; broad money supply (LM2), liquidity ratio (LR), inflation rate (IFR) and cash reserve ratio (CRR) does not granger cause loan and advances of financial institutions in Nigeria within the examined period. The study concluded that the structural change in monetary policy system and monetary policy rate have significant impact on loan and advances of financial institutions in Nigeria.

Garbobiya, Oladipo and Lorembor (2024) analyzed the effect of financial inclusion on monetary policy objectives in the Economic Community of West African States over the period from 2004 to 2020. WDI, the Global Economy database<sup>1</sup>, the World Bank Global Findex Database, and the Bank of Ghana were the sources of the data. The study used impulse response functions and panel vector autoregression through the GMM framework. The results revealed that throughout the ECOWAS, financial inclusion reduces monetary policy effectiveness. In particular, financial inclusion raises consumer prices, interest rates, and employment rates while decreasing output growth. Despite this, financial inclusion raises the value of the exchange rate, which causes native currencies to appreciate. The study came to the conclusion that a sub-region must integrate its monetary policy in order for the ECOWAS sub-region as a whole to have a single monetary policy framework.

Esely and Taonezvi (2024) examined the linkage between digital financial inclusion, monetary policy transmission, and economic development in 18 Sub-Saharan African countries from 2004 to 2021 obtained from International Monetary Fund (IMF) and World Bank websites. The study used panel data and used real gross domestic product per capita, broad money growth, and a digital financial inclusion index as proxies for economic development, monetary policy transmission, and digital financial inclusion, respectively. According to the study's results, Sub-Saharan African central banks should prioritize legislative changes, regulatory enhancements, and policy reform in order to encourage digital financial inclusion. In order to promote digital financial inclusion, sustainable economic growth, and the reduction of regional differences, the study comes to the conclusion that bolstering rural financial infrastructure is essential.

Ozili (2024) analyzed the determinants of financial inclusions in Nigeria. Focusing on the monetary policy and banking sector factors that affect the degree of financial inclusion in Nigeria, the study expanded the empirical discussion on the drivers of financial inclusion. Data from the World Bank's global financial indicators (GFDI) and WDI were used in the study to estimate the factors influencing financial inclusion in Nigeria from 2007 to 2021 using the two-stage least squares regression method. The findings demonstrated the importance of the CBN's monetary policy rate, savings deposit rate, and bank loan to deposit ratio in influencing financial inclusion in Nigeria. In particular, the degree of financial inclusions is reduced when the central bank interest rate rises, increased when the savings deposit rate rises, and decreased when the loan-to-deposit ratio rises. The quantile regression approach is a reliable alternative estimation method for these determinants. According to the study's findings, which are based on two-stage least squares estimate, the nominal interest rate, inflation rate, and interbank lending rate all influence financial inclusion in Nigeria.

Mabuza (2023) analyzed the influence of financial inclusion on monetary policy effectiveness in Eswatini, utilizing quarterly data from 2013 to 2022. The study employed financial inclusion variables such as deposit and loan balances held by commercial banks, expressed as a percentage of GDP, while inflation served as the measure of monetary policy effectiveness. Money supply and the T-bill rate were included as control variables. The Granger causality tests showed a one-way causality running from monetary policy effectiveness (headline inflation) to financial inclusion (deposits). Further analysis using the Vector Autoregression Model (VAR) indicated that financial inclusions, represented by bank deposit balances, enhances monetary policy effectiveness, whereas bank loan balances appear to diminish it. The study concludes that financial inclusion Granger causes monetary policy effectiveness and plays a significant role in its success in Eswatini.

Maher (2022) examined the relationship between financial inclusion indices and monetary policy in Egypt. The study used a VAR model, which was enhanced by an ARDL model, to investigate the aforementioned link. It also used quarterly data on outstanding deposits and loans from the IMF-FAS for the years 2004 to 2020. The study added to the body of the literature by examining which of the sectors households or SMEs are better suited for the effectiveness of monetary policy in order to formulate more specialized policy recommendations. Inflation and total deposits made by households and SMEs were found to be significantly and negatively correlated by the study. A situation of excessive debt in the sector that may affect the general stability of the financial system is implied by some specifications that suggest a strong positive correlation between inflation and loans granted to SMEs.

Lambaet *al.* (2025) examined the impact of financial inclusion on economic growth in Nigeria from 1992 to 2022. The study adopted analytical research design while finance-led growth theory was adopted as the theoretical framework. The data used were obtained from CBN statistical bulletins for data on bank credits or loans and bank branches and World Bank and World Development Indicators, 2022 for data on economic growth rate. The study conducted correlation test, unit root test, and ARDL bound test for co-integration to analyze the data. The ARDL results revealed that a unit increase in financial inclusion reduced economic growth by 5.14 units. It therefore means that financial inclusion increase access to

financial credits that promotes economic growth. However, if the borrowed funds are channeled into consumption or unproductive sectors rather than investment in growth-enhancing activities, it can negatively affect economic growth. The study therefore concluded that financial inclusion has a positive impact in promoting economic growth in Nigeria for the period under review.

Atta and Ibrahim (2024) investigate the effect of financial inclusion on economic development in Nigeria, with the aim of analysing the interplay between the two variables through a review of relevant literature and empirical evidence. The finance-growth theory posits that development of financial systems cultivates an environment conducive to growth, operating through demand-following mechanism. This theory provides a solid basis for understanding the context of the investigation. Financial inclusion was proxied through money supply, which represents the size of the banking sector, while credit to the private sector measures the size and financial depth of the banking sector. Data were sourced from the Central Bank of Nigeria Statistical Bulletins and the World Development Indicators. The findings indicate both short-term and long-term relationships between financial inclusion and economic growth, aligning with the theoretical framework.

Ogbonna *et al.*, (2024) examined the financial inclusion and Nigerian economic growth for the period 1980-2022. The study considered the following three objectives; to examine the significant impact of financial inclusion on the Nigerian economic growth, evaluate the impact of financial inclusion on poverty reduction in Nigeria and to ascertain the impact of financial inclusion on savings growth in Nigerian economy. Secondary time series data were used to carry out the empirical analysis. The study employed the aid of vector error correction model (VECM) approach, Augmented Dickey-Fuller (ADF) and Phillips-Perron tests, Co-integration Test and ECM. Based on the above econometric and statistic techniques conducted, it was observed that financial inclusion has significant positive impact on the Nigerian economic growth. The results indicated that financial inclusion has significant positive impacts on poverty reduction in Nigeria.

Akinrinola and Folorunso (2022) examines how financial inclusion relates with economic growth in Nigeria. Data was obtained from the bulletins of the Central Bank of Nigeria covering the period 1981-2020. Statistical analysis involves the use of descriptive statistics, Johansen Co-Integration Test, Phillips-Perron Unit Root Test, Pairwise Granger Causality and Error Correction Model. To estimate the hypotheses formulated in alignment with the set objectives, the error correction model was used. Economic growth, the dependent variable, was proxied by Gross Domestic Product, while total bank deposit and total credit disbursement constitute what was used to proxy the independent variable financial inclusion. The Error Correction Model result shows that there was a positive and statistically significant relationship between total bank deposit and gross domestic product. Total credit disbursement has a negative and an insignificant relationship with gross domestic product. The result from the study validates the finance led growth hypothesis and established that finance is one of the factors that causes economic growth in Nigeria.

Enueshike and Okpebru (2020) examined effects of financial inclusion on economic growth in Nigeria from 2000–2018. The ex-post factor research design was adopted. Secondary data was collected from the Central Bank of Nigeria Statistical Bulletin. The dependent variable of

financial inclusion proxies by contribution of financial institutions to gross domestic product (GDP) was regressed on the explanatory variable of loan to small and medium enterprises (LSME), rural bank deposit (RBD) and control variable of inflation (INF). The statistical estimation of the explained and explanatory variable was done using auto-regressive distribution lag and findings from Wald tests indicated that loan to small and medium enterprise (LSME), rural bank deposit (RBD) and inflation (INF) has a significant effect on economic growth in Nigeria. The study recommended among other things that rural bank deposits (RBD) should be encouraged by Central Bank of Nigeria.

Wakdok (2018) conducted an econometric analysis on the impact of financial inclusion on economic growth in Nigeria. The study employed secondary data to obtain data from 1990-2014. The Error Correction Model was used to test the hypotheses. Based on empirical analysis, the study concluded that financial inclusion has a positive and significant impact on Economic Growth in Nigeria through financial deepening variables which are influenced by financial inclusion variables such as broad money, credit to private sector, loan deposit of the rural area and liquidity ratio of commercial banks.

Otiwu, *et al.*, (2018) study tried to establish the relationship between financial inclusion and economic growth with focus on microfinance for the period 1992 to 2013 in Nigeria. The study adopted ordinary least square method and employing the Johansen cointegration tests to test run and short relationship among variables. The dependent variable economic growth was proxied by gross domestic product and the explanatory variables were total deposits mobilized by SMEs, total loans and advances to SMEs, number of bank branches and investment. Findings indicate total deposits mobilized, number of bank branches and investment have an insignificant effect on economic growth while total loans and advances shown a significant effect on economic growth.

## 2.5 Gap in the Literature

Although numerous empirical studies have been conducted on Nigeria, a significant gap remains in comprehending the combined impact of monetary policy and financial inclusion on economic growth. Although research like Ufoeze *et al.* (2018) and Afolabi *et al.* (2018) discusses the effects of monetary policy tools on GDP and banking loans, while Ogbonna *et al.* (2024), Enueshike & Okpebru (2020), and Lambaet *et al.*, (2025) emphasize the role of financial inclusion in fostering growth, most studies examine these elements independently, overlooking the potential for financial inclusion to influence or enhance the effectiveness of monetary policy transmission. Furthermore, the primary emphasis on total GDP growth neglects aspects of inclusive growth like poverty alleviation, job creation, and the distribution of income. There is significant variability in measuring financial inclusion, encompassing bank deposits and loans to digital inclusion metrics, complicating the identification of the most effective pathways for fostering growth. Furthermore, the current literature inadequately examines dynamic and microeconomic factors, including household and firm credit utilization, productive investments, and risks related to credit misuse or over-indebtedness, which may affect policy results. Ultimately, the influence of digital financial services and fintech advancements on improving monetary policy effectiveness and fostering inclusive growth has not been thoroughly explored in Nigeria. Tackling these gaps is essential for producing thorough evidence that can assist policymakers in crafting monetary and financial inclusion approaches that promote sustainable and inclusive economic growth.

### 3.0 Methodology

#### 3.1 Research Design

This research employs a quantitative ex-post facto time-series methodology to examine the connection among monetary policy, financial inclusion, and economic growth in Nigeria. This design is suitable as it depends on historical secondary data, which is essential since monetary policy and financial inclusion cannot be manipulated through experiments, and it facilitates the analysis of both short-run and long-run dynamics in Nigeria's economy (Ufoeze *et al.*, 2018; Afolabi *et al.*, 2018; Ogbonna *et al.*, 2024).

#### 3.2 Source of Data

The data for this study will be obtained from secondary sources, using quarter data covered from 2004Q1 to 2024Q4, primarily the Central Bank of Nigeria (CBN) Statistical Bulletins, the World Bank Development Indicators (WDI), and the National Bureau of Statistics (NBS). Economic growth will be measured using the natural log of gross domestic product (GDP). Monetary policy variables will include the monetary policy rate (MPR), money supply (M2 or broad money), and the exchange rate (NGN/USD). Financial inclusion will be proxied by total bank deposits, loans and advances to SMEs, and the number of commercial bank branches. Inflation rate (CPI) will be included as a control variable to account for macroeconomic stability. These sources are considered reliable and widely used in empirical studies examining the relationship between monetary policy, financial inclusion, and economic growth in Nigeria (Ufoeze *et al.*, 2018; Afolabi *et al.*, 2018; Ogbonna *et al.*, 2024). The collected data will provide a solid foundation for conducting time-series econometric analyses to investigate both the short-run and long-run effects of monetary policy and financial inclusion on economic growth.

#### 3.4 Model Specification

In this research, variables related to monetary policy and financial inclusion were modified according to empirical findings in Nigeria (Ufoeze, Odimgbe, Ezeabalisi, & Alajekwu, 2018; Afolabi, Adeyemi, Salawudeen, & Fagbemi, 2018). Earlier studies mainly concentrated on monetary policy tools like the Monetary Policy Rate (MPR), Money Supply (M2), Exchange Rate (EXR), lending rates, and investments, neglecting to fully integrate financial inclusion variables as key elements of the model. To fill this gap, the present study adjusts and revises this models by incorporating essential financial inclusion metric number of bank branches (BRANCH) in addition to the traditional monetary policy variables. Inflation (INF) proxy by consumer price index is incorporated as a control variable to ensure macroeconomic stability. The functional form of the model is specified as:

$$EG_t = f(MPR_t, M2_t, EXR_t, BRANCH_t, INF_t) \quad (3.1)$$

Transformed equation (3.1) into econometric model

$$EG_t = \beta_0 + \beta_1 MPR_t + \beta_2 M2_t + \beta_3 EXR_t + \beta_4 BRANCH_t + \beta_5 INF_t + \mu_t \quad (3.2)$$

where: Economic Growth (EG) proxy by Gross Domestic Product, Monetary Policy Rate (MPR), Money Supply (M2), Exchange Rate Bank Branch (BRANCH), Inflation (INF) proxy by Consumer Price Index, Error Term ( $\mu_t$ ), Intercepts ( $\beta_0$ ), Coefficient ( $\beta_1 - \beta_4$ )

### 3.5 ARDL-bound testing Cointegration

The econometric model will be estimated using the Autoregressive Distributed Lag (ARDL) method developed by Pesaran, Shin, and Smith (2001). The ARDL was chosen due to its ability to identify long-term relationships among variables, its effectiveness with small sample sizes, and, crucially, the variables unique integration levels I(0) and I(1). Transformed equation (3.2) into ARDL specification as;

$$\begin{aligned} \Delta \ln EG_t = & \theta_0 + \theta_1 \ln EG_{t-1} + \alpha_1 \ln MPR_{t-1} + \alpha_2 \ln M2_{t-1} + \alpha_3 \ln EXR_{t-1} + \alpha_4 \ln BRANCH_{t-1} + \alpha_5 \ln INF_{t-1} \\ & + \sum_{i=1}^b \beta_1 \Delta \ln EG_{t-1} + \sum_{i=1}^b \beta_2 \Delta \ln MPR_{t-1} + \sum_{i=1}^b \beta_3 \Delta \ln M2_{t-1} + \sum_{i=1}^b \beta_4 \Delta \ln EXR_{t-1} \\ & + \sum_{i=1}^b \beta_5 \Delta \ln BRANCH_{t-1} + \sum_{i=1}^b \beta_5 \Delta \ln INF_{t-1} + \varepsilon_t \end{aligned} \quad (3.3)$$

The first part of the equation, without  $\Delta$ , indicates long-run dynamics, while the second part, with  $\Delta$ , represents short-run dynamics. The bounds testing approach is utilized to establish cointegration among the variables before estimating the equation. To estimate the short-run adjustment to equilibrium, the Error Correction Model (ECM) is specified in Equation 3.4 as follows:

$$\begin{aligned} \Delta \ln EG_t = & \theta_0 + \sum_{i=1}^b \beta_1 \Delta \ln EG_{t-1} + \sum_{i=1}^b \beta_2 \Delta \ln MPR_{t-1} + \sum_{i=1}^b \beta_3 \Delta \ln M2_{t-1} + \sum_{i=1}^b \beta_4 \Delta \ln EXR_{t-1} \\ & + \sum_{i=1}^b \beta_4 \Delta \ln BRANCH_{t-1} + \sum_{i=1}^b \beta_5 \Delta \ln INF_{t-1} \\ & + \delta ECM_{t-1} + \varepsilon_t \end{aligned} \quad (3.4)$$

Where  $\delta$  represents the speed of adjustment of the parameters toward long-run equilibrium following a shock to the system, and  $ECM_{t-1}$  is the error correction term.

### 3.6 Granger Causality Test

The Granger-Causality test is utilized to determine if a causal relationship exists between the variables. Regardless, if cointegration is present, the relationship between the variables must be either bidirectional, unidirectional, or neutral (Maganya, 2020). We utilized the method established by (Granger, 1969) to achieve this. The study assess the null hypothesis that  $BRANCH_t$  does not Granger cause  $EG_t$ ; if we reject the null hypothesis, it indicates that  $BRANCH_t$  does Granger cause  $EG_t$ . The process of estimating the Granger causality test encompasses these two regressions:

$$\begin{aligned} EG_t = & \alpha_0 + \sum_{i=1}^k \alpha_i EG_{t-1} + \sum_{i=1}^k \beta_i BRANCH_{t-1} \\ & + \mu_{1t} \end{aligned} \quad (3.5)$$

$$BRANCH_t = \gamma_0 \sum_{i=1}^k \gamma_i BRANCH_{t-1} + \sum_{i=1}^k \delta_i EG_{t-1} + \mu_{2t} \quad (3.6)$$

It is presumed that the disturbances  $\mu_{1t}$  and  $\mu_{2t}$  are uncorrelated. The first equation assumes that the current *Branch* is related to previous values of both *EG* and *Branch*, while the second equation assumes that *Branch* behaves similarly to *EG*.

**Table 1: Variables, Measurement, Scale, and Source**

| Variables                                          | Scale of Measurement          | Source (Date)                                                             |
|----------------------------------------------------|-------------------------------|---------------------------------------------------------------------------|
| Economic growth (proxy by GDP)                     | measured in billion NGN       | CBN Statistical Bulletin (2024); World Bank Development Indicators (2024) |
| Monetary policy rate (MPR)                         | Measured in percentage (%)    | CBN Statistical Bulletin (2024)                                           |
| Money supply (broad money) M2                      | Measured in billion NGN       | CBN Statistical Bulletin (2024); World Bank Development Indicators (2024) |
| Exchange rate (EXR)                                | Measured in NGN per USD       | CBN Statistical Bulletin (2024); World Bank Development Indicators (2024) |
| Number of bank branches (BRANCH)                   | Measured in count of branches | CBN Statistical Bulletin (2024)                                           |
| Inflation rate (INF) proxy by Consumer Price Index | Measured in percentage (%)    | CBN Statistical Bulletin (2024); NBS (2024)                               |

**Source:** Central Bank of Nigeria (CBN), World Bank Development Indicator (WDI), National Bureau of Statistics (NBS), (2024)

#### 4.0 Results and Presentation

**Table 2: Descriptive Statistics**

|              | EG        | MPR      | M2       | EXR      | BRANCH   | INF      |
|--------------|-----------|----------|----------|----------|----------|----------|
| Mean         | 1.72E+14  | 12.33333 | 26.44581 | 297.0677 | 5.079783 | 14.07499 |
| Median       | 1.92E+14  | 12.00000 | 22.47905 | 158.5526 | 4.918974 | 12.53783 |
| Maximum      | 2.18E+14  | 27.50000 | 90.01232 | 1478.965 | 6.492203 | 33.24210 |
| Minimum      | 1.04E+14  | 3.250000 | 11.30051 | 118.5667 | 3.738850 | 5.388008 |
| Std. Dev.    | 3.54E+13  | 4.821721 | 18.74523 | 296.8625 | 0.818265 | 6.097425 |
| Skewness     | -0.645014 | 1.105631 | 2.539401 | 3.064246 | 0.327486 | 1.490198 |
| Kurtosis     | 1.983976  | 5.852949 | 8.376025 | 12.39147 | 1.897356 | 5.589290 |
| Jarque-Bera  | 9.437658  | 45.60148 | 191.4356 | 440.1536 | 5.756846 | 54.55513 |
| Probability  | 0.008926  | 0.000000 | 0.000000 | 0.000000 | 0.056223 | 0.000000 |
| Sum          | 1.44E+16  | 1036.000 | 2221.448 | 24953.69 | 426.7018 | 1182.299 |
| Sum Sq. Dev. | 1.04E+29  | 1929.667 | 29164.85 | 7314571. | 55.57325 | 3085.824 |
| Observations | 84        | 84       | 84       | 84       | 84       | 84       |

**Source:** Author Computation (2026)

This section reviews the results and conclusions of this study. Table 2 provides descriptive statistics on the variables used in the analysis, namely economic growth (EG), MPR (policy rate), money supply (M2), exchange rate (EXR), bank branches (BRANCH) and inflation (INF), based on quarterly data from 2004Q1 to 2024Q4. The table gives a statistical summary of all variables in the sample. The standard deviations show a range of volatility for all variables, with relatively high volatility for economic growth, the broad money supply and the exchange rate reflecting Nigeria's exposure to macroeconomic shocks and policy changes

during the period. On the other hand, the number of bank branches shows a relatively low variation, which suggests a gradual and structured adjustment of the banking sector. All variables register positive mean values, which indicate a sustained average level over time. Statistics on skewness reveal that most variables are positively biased, which means that there are episodes of extreme high value, especially in the area of money supply, exchange rate and inflation, while economic growth shows a slightly negative skew. The kurtosis indicates that MPR, M2, EXR and INF are leptokurtic, indicating a fat spread and an impact of significant structural changes, particularly in times of monetary expansion, exchange rate depreciation and inflationary pressures. Jarque-Bera statistics also confirm that, except for bank branches, most variables deviate significantly from the normal value, which highlights the asymmetry of the data.

**Table 3: Correlation Matrix**

|        | EG        | MPR       | M2       | EXR       | BRANCH    | INF      |
|--------|-----------|-----------|----------|-----------|-----------|----------|
| EG     | 1.000000  |           |          |           |           |          |
| MPR    | 0.656922  | 1.000000  |          |           |           |          |
| M2     | 0.497695  | 0.781236  | 1.000000 |           |           |          |
| EXR    | 0.554553  | 0.851203  | 0.872728 | 1.000000  |           |          |
| BRANCH | -0.077860 | -0.140718 | 0.191058 | -0.124046 | 1.000000  |          |
| INF    | 0.381753  | 0.665674  | 0.774294 | 0.862411  | -0.135773 | 1.000000 |

**Source:** Author Computation (2026)

Table 3 shows a matrix of correlations between economic growth (EG), the MPR, the money supply (M2), the exchange rate (EXR), bank branches (BRANCH) and inflation (INF). Economic growth is positively correlated to MPR, M2, EXR and INF, suggesting that periods of higher growth are correlated to tighter monetary policy, increased liquidity, exchange rate movements and rising prices. Strong positive correlations between MPR, M2, EXR and INF are observed, reflecting the close interaction between monetary policy measures, money supply expansion, exchange rate dynamics and inflationary pressures in Nigeria. The high correlation between the exchange rate and M2, as well as between the exchange rate and inflation, underlines the central role of exchange rate movements in conveying monetary and inflationary shocks. Conversely, bank branches show a weak and mostly negative correlation with macroeconomic variables, indicating that changes in physical branches are largely driven by structural and technological factors rather than by short-term macroeconomic conditions.

**Table 4: Results of the unit root test using the augmented Dickey–Fuller (ADF) and Phillips–Perron (PP) tests**

| Variable | ADF test statistics   |                            | PP test statistics    |                            | Order of integration |
|----------|-----------------------|----------------------------|-----------------------|----------------------------|----------------------|
|          | Level                 | 1 <sup>st</sup> difference | Level                 | 1 <sup>st</sup> difference |                      |
| EG       | -1.7911<br>(0.6998)   | -1.6665*<br>(0.0902)       | 1.1472<br>(0.9140)    | 18.6707***<br>(0.0000)     | I(1)                 |
| MPR      | -3.8508**<br>(0.0186) | -9.0000***<br>(0.0000)     | -3.9618**<br>(0.0137) | -8.9851***<br>(0.0000)     | I(0)                 |
| M2       | -1.3949<br>(0.8555)   | -9.1508<br>(0.0000)***     | -1.4173<br>(0.84880)  | -9.1525***<br>(0.0000)     | I(1)                 |
| EXR      | 0.5241<br>(0.9992)    | -3.9408<br>(0.0286)***     | -0.1614<br>(0.9929)   | -10.5545<br>(0.0000)***    | I(1)                 |
| BRANCH   | -1.6920<br>(0.7462)   | -8.8961<br>(0.0000)***     | -1.7345<br>(0.7270)   | -8.8961<br>(0.0000)***     | I(1)                 |
| INF      | -2.2108<br>(0.4772)   | -9.0971***<br>(0.0000)     | -2.2478<br>(0.4571)   | -9.0979<br>(0.0000)***     | I(1)                 |

\*\*\*, \*\*, \* (1%, 5% and 10% significance level)

Table 4 shows the results of the enhanced Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests used for the Nigeria monetary policy, financial inclusion and economic growth analysis. The results show that economic growth (EG, proxied by GDP), money supply (M2), exchange rate (EXR), branch count (BRANCH) and inflation (INF, proxied by CPI) are not stationary at the level of the first difference in both tests, but become stationary after the second difference. This suggests that they are integrated of the first order, I(1), and are therefore characterised by long-term movements driven by macroeconomic and structural factors. Conversely, the MPR is statistically significant and stable at the level of both the ADF and the PPP tests, indicating the order of I(0) and reflecting the stability of monetary policy in Nigeria. The presence of a mixture of variables I(0) and I(1) in the model justifies the use of an automatic distributed drift approach, which is suitable for both short-term and long-term relationships between variables with different degrees of integration.

**Table 5: Cointegration test (autoregressive distributed lag [ARDL] bounds approach)**

| Critical value bounds |          |          | Test statistic | Value    | k |
|-----------------------|----------|----------|----------------|----------|---|
| Significance          | I0 Bound | I1 Bound |                |          |   |
| 10%                   | 2.2      | 3.0      | F-statistic    | 5.560169 | 5 |
| 5%                    | 2.39     | 3.88     |                |          |   |
| 1%                    | 3.06     | 4.15     |                |          |   |

\*\*\*, \*\*, \* (1%, 5% and 10% significance level)

Table 5 shows the results of the ARDL cointegration Test, where the calculated F-statistics of 5.560169 with five regressors exceed the upper bound of significance levels at 10, 5 and 1 percent. This results in the rejection of the null hypothesis of non- cointegration, confirms the existence of a stable relationship between variables in the model over time and justifies the estimation of both long and short term dynamics in the context of the ARDL.

**Table 6: Short-run and Long-run estimates for the effects of monetary policy, financial inclusion and economic growth in Nigeria using dynamic simulated autoregressive distributed lag (ARDL)**

| <b>Dependent variable=<math>EG_t</math></b> |                    |                   |                |
|---------------------------------------------|--------------------|-------------------|----------------|
| <b>Varibales</b>                            |                    |                   |                |
| <b>Short-run estimates</b>                  | <b>Coefficient</b> | <b>Std.error</b>  | <b>p-value</b> |
| $EG_t$                                      | 0.755569           | 0.592014          | 0.2059         |
| LEG(-1)*                                    | -0.023886          | 0.019308          | 0.2200         |
| LMPR**                                      | -0.003867          | 0.009443          | 0.6833         |
| LM2**                                       | 0.001162           | 0.011840          | 0.9221         |
| LEXR(-1)                                    | 0.001028           | 0.013764          | 0.9407         |
| LBRANCH(-1)                                 | 0.022757           | 0.026727          | 0.3973         |
| LINF(-1)                                    | -0.000982          | 0.012035          | 0.9352         |
| D(LEXR)                                     | 0.062874           | 0.026782          | 0.0216**       |
| D(LBRANCH)                                  | 0.106825           | 0.049764          | 0.0351**       |
| D(LINF)                                     | -0.031616          | 0.017272          | 0.0713         |
| $ECM_{t-1}$                                 | -0.023886          | 0.005424          | 0.0000***      |
| <b>Long run paramters</b>                   |                    |                   |                |
| LEG(-1)                                     | 0.976114           | 0.019308          | 0.0000***      |
| LMPR                                        | -0.003867          | 0.009443          | 0.6833         |
| LM2                                         | 0.001162           | 0.011840          | 0.9221         |
| LEXR                                        | 0.062874           | 0.026782          | 0.0216**       |
| LEXR(-1)                                    | -0.061846          | 0.025422          | 0.0174**       |
| LBRANCH                                     | 0.106825           | 0.049764          | 0.0351**       |
| LBRANCH(-1)                                 | -0.084068          | 0.046074          | 0.0721*        |
| LINF                                        | -0.031616          | 0.017272          | 0.0713*        |
| LINF(-1)                                    | 0.030634           | 0.016700          | 0.0707*        |
| Constant                                    | 0.755569           | 0.592014          | 0.2059         |
| <b>Residual Diagnostics</b>                 |                    | <b>Statistics</b> | <b>p-value</b> |
| ARCH test for heteroscedasticity            |                    | 1.277489          | 0.2849         |
| Breusch–Godfrey serial LM test              |                    | 1.139933          | 0.3478         |

*Note: The maximum lag order selected is 1 based on Akaike information criterion (AIC).*

*Abbreviations: ARCH, autoregressive conditional heteroskedasticity; LM, Lagrange multiplier.*

*\*\*\*, \*\*, \* (1%, 5% and 10% significance level)*

Table 6 presents short-term and long-term dynamic ARDL estimates of the impact of monetary policy and financial inclusion in Nigeria on economic growth. In the short run, the error correction term  $ECM_{t-1}$  is negative and statistically significant at one percent, which confirms the convergence towards long-run equilibrium and indicates that the deviation from the equilibrium is being progressively corrected. Exchange rate changes and bank branch expansion have a significant positive short-term impact on economic growth, while changes in inflation have a moderate negative impact, indicating that financial inclusion and macro-prudential stability are more important in the short term than traditional monetary policy instruments such as the MPR and the money supply, which remain negligible. In the long run, the economic slowdown is strongly positive and significant, which confirms the durability of growth. Exchange rates and bank branches show mixed but statistically significant effects, suggesting that financial inclusion is deepening growth through improved access to financial services, albeit with adjustment costs in the long run. Inflation remains subdued with a negative long-term impact reflecting continued macroeconomic instability, while MPR and

money supply remain negligible, indicating limited direct transmission of monetary policy to growth. These findings are largely in line with the findings of Ufoeze *et al.*, (2018), which reported a long-term relationship and negligible effects of MPR on growth, although this is in contradiction with their finding of a significant positive role of the money supply. The negligible impact of MPR is in line with the findings of Afolabiet *al.*, (2018) and Ozili (2024), which show that higher policy rates undermine financial inclusion and the transfer of credit. What is important, the positive role of bank branches is increasingly linked to the fintech driven financial inclusion landscape in Nigeria, where physical branches are now hubs for digital channels such as mobile banking, account banking, USSD and fintech payment systems.

This hybrid model increases information, trust and accessibility, particularly in semi-urban and rural areas, thus increasing the growth-enhancing impact of financial inclusion. This evidence is supported by the work of Enueshike and Okpebru (2020), Wakdok (2018), Ogbonna (2011), and Zajac (2011; 2024) and Akinrinola and Folorunso (2022), which document the effect of financial inclusion indicators on Nigeria's economic growth. But the mixed effects of exchange rates and inflation are echoed by Garbobiyaet *al.*, (2024) and Maher (2022), arguing that the expansion of financial inclusion, especially through digital finance, may weaken the effectiveness of monetary policy and increase price pressures. The results show that in Nigeria, particularly in the current fintech era, channels of financial inclusion anchored in bank branches and digital platforms play a more important role in driving economic growth than traditional monetary policy instruments, reinforcing the importance of a technology-enabled and inclusive financial infrastructure for sustainable growth. The residual diagnostic results indicate that the estimated ARDL model is statistically well behaved. The ARCH test for heteroscedasticity has a p-value of 0.2849, implying failure to reject the null hypothesis of homoscedasticity and confirming that the error variance is constant over time. Similarly, the Breusch–Godfrey serial correlation LM test yields a p-value of 0.3478, indicating the absence of serial correlation in the residuals.

**Table 7: Granger Causality**

| Null Hypothesis                    | F-Statistic | Probability | Decision      |
|------------------------------------|-------------|-------------|---------------|
| LBRANCH does not Granger Cause LEG | 0.89724     | 0.4119      | Do not reject |
| LEG does not Granger Cause LBRANCH | 0.29257     | 0.7472      | Do not reject |

Source: *Author computation (2026)*

As presented in Table 7, the Granger causality test results reveal that there is no significant causal relationship between bank branch expansion (LBRANCH) and economic growth (LEG) in Nigeria. Specifically, LBRANCH does not Granger Cause LEG, and LEG does not Granger Cause LBRANCH, indicating that changes in banking infrastructure alone do not predict economic growth, nor does growth drive branch expansion. This finding aligns with empirical evidence suggesting that financial inclusion, while important, has a more meaningful impact on growth when combined with effective monetary policy, digital financial services, and broader financial literacy (Ufoeze *et al.*, 2018; Afolabi *et al.*, 2018). It underscores the need for an integrated policy approach that leverages both monetary tools and inclusive financial strategies to stimulate sustainable economic growth in Nigeria.

## Conclusion and Recommendations

Analysis of monetary policy, financial inclusion and economic growth in Nigeria shows that while economic growth, the money supply and the exchange rate are highly volatile, the gradual expansion of bank branches points to a structured adjustment of the banking sector. A correlation analysis shows a positive correlation between growth, monetary policy measures, the money supply, the exchange rate and inflation, while the expansion of branches is only marginally correlated with macroeconomic variables, underlining the role of structural and technological factors. Unit root tests confirm the mix of variables  $I(0)$  and  $I(1)$  which justifies the use of the ARDL. The results of the ARDL show that in the short term exchange rate changes and bank branch expansion are significantly boosting growth, while inflation has a moderate negative impact and traditional monetary policy instruments have negligible effects. Financial inclusion, both through physical and fintech-enabled banking channels, will underpin sustainable growth in the long term, although inflation and exchange rate fluctuations have mixed effects. Granger causality results also reveal no direct causal link between the expansion of bank branches and economic growth, underlining that financial inclusion is not enough in itself without complementary monetary policies, digital financial services, and financial literacy. Overall, the findings highlight the critical importance of a technology-based, inclusive financial infrastructure, coupled with sound monetary policy, to drive sustainable economic growth in Nigeria. Based on the conclusion the following recommendations were made;

- i. Policymakers and financial institutions should accelerate the integration of digital banking platforms, mobile money and fintech solutions with physical branches of banks. This approach will increase accessibility, confidence and financial participation, especially in semi-urban and rural areas, and will increase the growth-enhancing effects of financial inclusion in Nigeria.
- ii. The Central Bank of Nigeria and the competent authorities should devise monetary policies that are complementary to initiatives to promote financial inclusion. Policies should ensure that instruments such as the MPR and liquidity management support rather than impede access to credit, savings and digital financial services, thus enhancing their long-term impact on economic growth.
- iii. In order to maximise the benefits of financial inclusion, governments and financial institutions should invest in national campaigns on financial literacy. Educating individuals and businesses about digital banking, saving, investing and credit management will improve the efficiency of financial services, enhance macroeconomic stability and facilitate sustainable economic growth.

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